

# VALLEY BAPTIST CHURCH (PWSNO 1090234) SOURCE WATER ASSESSMENT REPORT

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June 5, 2001



## State of Idaho Department of Environmental Quality

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## Source Water Assessment for Valley Baptist Church

Under the Federal Safe Drinking Water Act Amendments of 1996, all states are required by the U.S. Environmental Protection Agency (EPA) to assess every source of public drinking water for its relative sensitivity to contaminants regulated by the Act. The Idaho Department of Environmental Quality is completing the assessments for all Idaho public drinking water systems. The assessment for your particular drinking water source is based on a land use inventory within a 1,000 foot radius of your well, your water quality history, construction characteristics associated with your well or wells, and site specific sensitivity factors associated with the aquifer your water is drawn from.

This report, *Source Water Assessment for Valley Baptist Church* describes the public drinking water source, the potential contaminant sites located within a 1000-foot boundary around the well, and the susceptibility (risk) that may be associated with any potential contaminants. This assessment, taken into account with local knowledge and concerns, should be used as a planning tool to develop and implement appropriate protection measures for this system. **The results should not be used as an absolute measure of risk and are not intended to undermine the confidence in your water system.**

**Potential Contaminant Inventory.** Valley Baptist Church, located on Spirit Lake Road in the Hoodoo Valley, gets its drinking water from a 119-foot deep well drilled in 1990. Potential contaminant sites documented inside the 1000-foot boundary around the well include a public road within 50 feet of the pump house, and a septic system about 150 feet from the well. The August 19, 1999 Sanitary Survey of the Valley Baptist Church water system mentions evidence of cattle near the well.

The map on page 5 of this report shows the 1000-foot boundary around the well and approximate locations of roads, buildings and the septic drainfield relative to the well. Table 1 summarizes information about the sites inventoried and contaminants that may be associated with them.

**Table 1. Valley Baptist Church Potential Contaminant Inventory**

Map ID	Site Description	Source of Information	Potential Contaminants
1	Road	USGS MAP	IOC, VOC, SOC, Microbial
2	Septic Drainfield	PWS File/Enhanced Inventory	IOC, Microbial

*IOC = inorganic chemical, VOC = volatile organic chemical, SOC = synthetic organic chemical*

**Water Quality History.** Valley Baptist Church is required to test quarterly for bacteria and yearly for nitrate contamination of the well. Bacteria have been absent from samples tested since May 1997. The system came under regulation in March 1997. The nitrate concentration for the sample tested in 1997 was 3.78 mg/l. The sample tested in 1999 had a concentration of 1.68 mg/l. The Maximum Contaminant Level (MCL) for nitrate is 10 mg/l. Nitrate results for 1998 and 2000 are not on file.

**Well Construction and Hydrogeologic Sensitivity.** The Valley Baptist Church well was drilled in April 1990 into an unconsolidated alluvial formation. The well is 119 feet deep with a 6-inch diameter steel casing that extends 105 feet below ground surface. Current Idaho Department of Water Resources standards for well construction require the wall thickness of a six-inch casing to be a minimum of 0.28 inches. The wall thickness of the Valley Baptist well is 0.25 inches. The bentonite clay surface seal is 18 feet deep, ending in a layer of sand, gravel and boulders. The well is not in a floodplain. The casing extends 9 inches above the concrete floor of the pump house and is fitted with a sanitary well seal to protect the well from surface runoff

Soils in the 1000-foot zone around the well are generally moderately to well drained, with no naturally occurring protective layer of clay or silt to retard transport of contaminants from the surface to the ground water. The static water level in the well is 83 feet below the surface

**Susceptibility to Contamination.** Incorporating information from the public water system file, from the potential contaminant inventory and from the well log, DEQ analyzed the susceptibility of the Valley Baptist Church well to four classes of regulated contaminants. The well ranked highly susceptible to microbial contamination because of livestock coming within 50 feet of the well. The well ranked moderately susceptible to organic and inorganic chemical contamination, mostly because of natural geologic characteristics of the well site. The susceptibility analysis worksheet on pages 6 of this report shows how your well was scored. Formulas used to compute the final susceptibility scores are shown on the bottom of the worksheet.

**Protection Measures.** This assessment should be used as a basis for determining appropriate new protection measures or re-evaluating existing protection efforts. No matter what ranking a source receives, protection is always important. Whether the source is currently located in a “pristine” area or an area with numerous industrial and/or agricultural land uses, the way to ensure good water quality in the future is to act now to protect valuable water supply resources.

For Valley Baptist Church source water protection activities should start with bringing the system into full compliance with Idaho Rules for Public Drinking Water Systems by implementing the recommendations in the 1999 Sanitary Survey of the System. Fencing the well lot to keep livestock away from the well and maintaining the sanitary setback area free from the use or storage paints, solvents, pesticides, herbicides and petroleum products is particularly important.

The required monitoring schedule should be adhered to because trends indicated in a record of water quality through time can give early warning of problems with the well or distribution system. Because Valley Baptist Church doesn't have jurisdiction over the entire 1000-foot zone around the well, partnerships with neighbors and the highway district should be formed to regulate activities that could degrade the ground water.

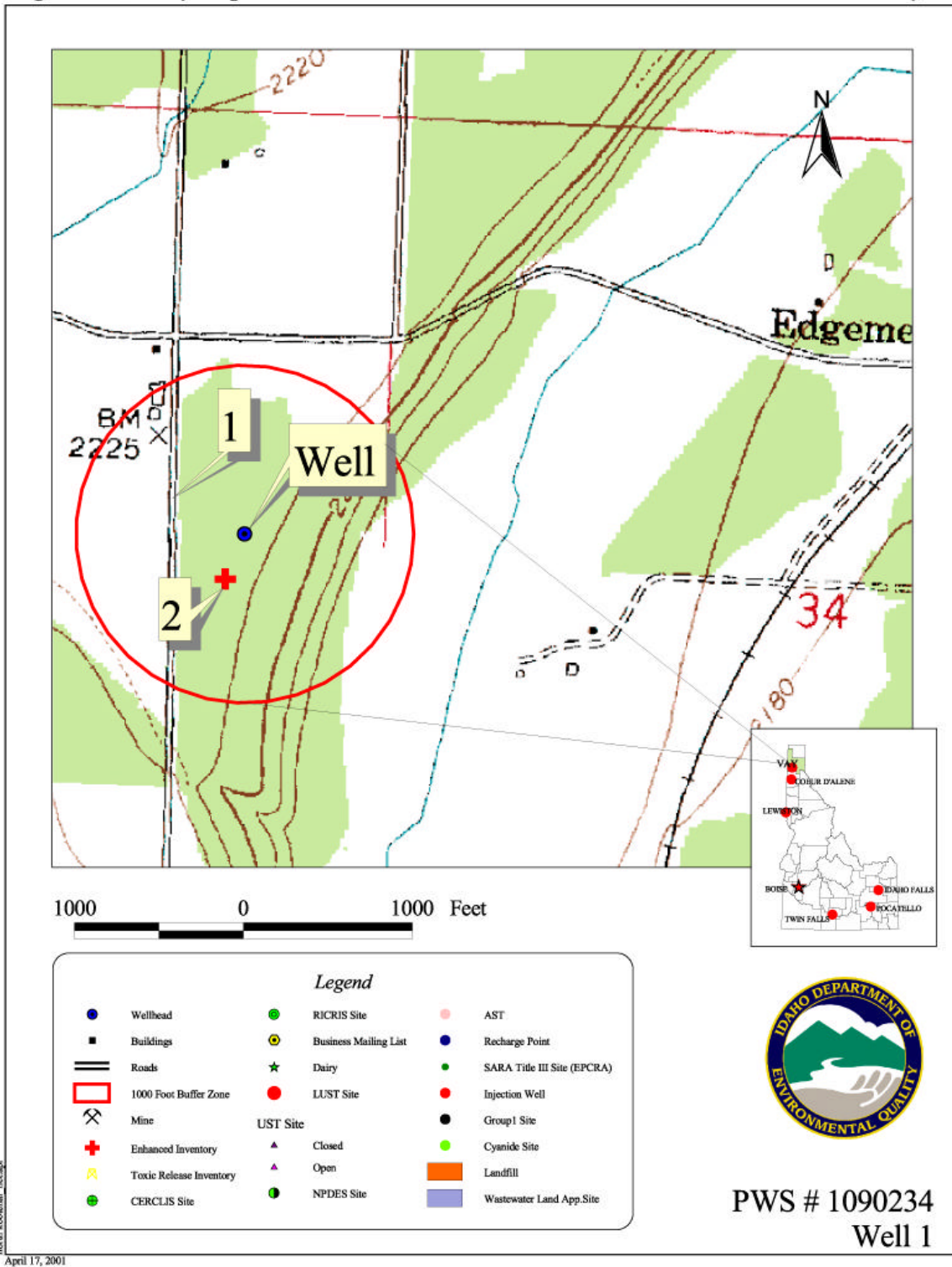
Valley Baptist Church should identify potential emergency situations that could affect ground water and work out response procedures. Source water protection activities should be aimed at long-term management strategies even though these strategies may not yield results in the near term.

For assistance in developing source water protection strategies please contact Tony Davis at the Coeur d'Alene Regional DEQ office at 208 769-1422.

DEQ website:

<http://www.deq.state.id.us>

Figure 1. Valley Baptist Church Delineation and Potential Contaminant Inventory.



## Attachment A

### Valley Baptist Church Susceptibility Analysis Worksheet

## Ground Water Susceptibility Analysis

Public Water System Name : **VALLEY BAPTIST CHURCH**  
Public Water System Number : **1090234**

Well # : **WELL 1**  
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1. System Construction		SCORE			
Drill Date	4/27/90				
Driller Log Available	YES				
Sanitary Survey (if yes, indicate date of last survey)	YES	1999			
Well meets IDWR construction standards	NO	1			
Wellhead and surface seal maintained	YES	0			
Casing and annular seal extend to low permeability unit	NO	2			
Highest production 100 feet below static water level	NO	1			
Well located outside the 100 year flood plain	NO	1			
<b>Total System Construction Score</b>		<b>5</b>			
2. Hydrologic Sensitivity					
Soils are poorly to moderately drained	NO	2			
Vadose zone composed of gravel, fractured rock or unknown	YES	1			
Depth to first water > 300 feet	NO	1			
Aquitard present with > 50 feet cumulative thickness	NO	2			
<b>Total Hydrologic Score</b>		<b>6</b>			
3. Potential Contaminant / Land Use -Sanitary Setback Zone		IOC Score	VOC Score	SOC Score	Microbial Score
Land Use Sanitary Setback Zone	RANGELAND, WOODLAND	0	0	0	0
Farm chemical use high	NO	0	0	0	
IOC, VOC, SOC, or Microbial sources in Sanitary Setback Zone	YES	NO	NO	NO	YES
<b>Total Potential Contaminant Source/Land Use Score -Sanitary Setback Zone</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>High*</b>
Potential Contaminant / Land Use -1000-Foot Boundary					
Contaminant sources present (Number of Sources)	YES	2	1	1	1
(Score = # Sources X 2 ) 8 Points Maximum		4	2	2	2
Sources of Class II or III leacheable contaminants or Microbials	YES	2	1	1	
4 Points Maximum		2	1	1	
Zone 1B contains or intercepts a Group 1 Area	NO	0	0	0	0
Land use 1000-Foot Boundary	Less Than 25% Agricultural Land	0	0	0	0
<b>Total Potential Contaminant Source / Land Use Score -1000-Foot Boundary</b>		<b>6</b>	<b>3</b>	<b>3</b>	<b>2</b>
<b>Cumulative Potential Contaminant / Land Use Score</b>		<b>6</b>	<b>3</b>	<b>3</b>	<b>2</b>
<b>4. Final Susceptibility Source Score</b>		<b>13</b>	<b>12</b>	<b>12</b>	<b>12</b>
5. Final Well Ranking		High	Moderate	Moderate	High*
<b>Automatically ranked highly susceptible to microbial contamination because of animals grazing near well</b>					

The final scores for the susceptibility analysis were determined using the following formulas:

1) VOC/SOC/IOC Final Score = Hydrologic Sensitivity + System Construction + (Potential Contaminant/Land Use x 0.27)

2) Microbial Final Score = Hydrologic Sensitivity + System Construction + (Potential Contaminant/Land Use x 0.35)

Final Susceptibility Ranking:

0 - 5 Low Susceptibility

6 - 12 Moderate Susceptibility

> 13 High Susceptibility

## POTENTIAL CONTAMINANT INVENTORY LIST OF ACRONYMS AND DEFINITIONS

**AST (Aboveground Storage Tanks)** – Sites with aboveground storage tanks.

**Business Mailing List** – This list contains potential contaminant sites identified through a yellow pages database search of standard industry codes (SIC).

**CERCLIS** – This includes sites considered for listing under the **Comprehensive Environmental Response Compensation and Liability Act (CERCLA)**. CERCLA, more commonly known as ASuperfund® is designed to clean up hazardous waste sites that are on the national priority list (NPL).

**Cyanide Site** – DEQ permitted and known historical sites/facilities using cyanide.

**Dairy** – Sites included in the primary contaminant source inventory represent those facilities regulated by Idaho State Department of Agriculture (ISDA) and may range from a few head to several thousand head of milking cows.

**Deep Injection Well** – Injection wells regulated under the Idaho Department of Water Resources generally for the disposal of stormwater runoff or agricultural field drainage.

**Enhanced Inventory** – Enhanced inventory locations are potential contaminant source sites added by the water system. These can include new sites not captured during the primary contaminant inventory, or corrected locations for sites not properly located during the primary contaminant inventory. Enhanced inventory sites can also include miscellaneous sites added by the Idaho Department of Environmental Quality (DEQ) during the primary contaminant inventory.

**Floodplain** – This is a coverage of the 100year floodplains.

**Group 1 Sites** – These are sites that show elevated levels of contaminants and are not within the priority one areas.

**Inorganic Priority Area** – Priority one areas where greater than 25% of the wells/springs show constituents higher than primary standards or other health standards.

**Landfill** – Areas of open and closed municipal and non-municipal landfills.

**LUST (Leaking Underground Storage Tank)** – Potential contaminant source sites associated with leaking underground storage tanks as regulated under RCRA.

**Mines and Quarries** – Mines and quarries permitted through the Idaho Department of Lands.)

**Nitrate Priority Area** – Area where greater than 25% of wells/springs show nitrate values above 5mg/l.

**NPDES (National Pollutant Discharge Elimination System)** – Sites with NPDES permits. The Clean Water Act requires that any discharge of a pollutant to waters of the United States from a point source must be authorized by an NPDES permit.

**Organic Priority Areas** – These are any areas where greater than 25 % of wells/springs show levels greater than 1% of the primary standard or other health standards.

**Recharge Point** – This includes active, proposed, and possible recharge sites on the Snake River Plain.

**RICRIS** – Site regulated under **Resource Conservation Recovery Act (RCRA)**. RCRA is commonly associated with the cradle to grave management approach for generation, storage, and disposal of hazardous wastes.

**SARA Tier II (Superfund Amendments and Reauthorization Act Tier II Facilities)** – These sites store certain types and amounts of hazardous materials and must be identified under the Community Right to Know Act.

**Toxic Release Inventory (TRI)** – The toxic release inventory list was developed as part of the Emergency Planning and Community Right to Know (Community Right to Know) Act passed in 1986. The Community Right to Know Act requires the reporting of any release of a chemical found on the TRI list.

**UST (Underground Storage Tank)** – Potential contaminant source sites associated with underground storage tanks regulated as regulated under RCRA.

**Wastewater Land Applications Sites** – These are areas where the land application of municipal or industrial wastewater is permitted by DEQ.

**Wellheads** – These are drinking water well locations regulated under the Safe Drinking Water Act. They are not treated as potential contaminant sources.

**NOTE:** Many of the potential contaminant sources were located using a geocoding program where mailing addresses are used to locate a facility. Field verification of potential contaminant sources is an important element of an enhanced inventory.

Where possible, a list of potential contaminant sites unable to be located with geocoding will be provided to water systems to determine if the potential contaminant sources are located within the source water assessment area.